

CLAIMS:

1. A structural element formed from castable material, said structural element comprising:
 - a plurality of fibre reinforced plastic, tubular members;
 - 5 a plurality of fibre reinforced plastic, spacer members, said spacer members extending between said plurality of tubular members;
 - a plurality of fibre reinforced plastic, interconnecting members, said interconnecting members positioned in a different orientation to said spacing members; and
 - 10 castable material surrounding said members;
 - wherein the interconnecting members and spacer members intersect with each other.
2. The structural element of claim 1 wherein the members are produced from any suitable glass, carbon or aramid fibre and/or plastics.
- 15 3. The structural element of claim 1 wherein a surface area of the members that contact the castable material are abraded.
4. The structural elements of claim 1 wherein the members are coated with sand and/or gravel.
5. The structural element of claim 1 wherein the tubular members are
20 pultruded fibre reinforced plastic.
6. The structural element of claim 1 wherein the tubular members are hollow.
7. The structural element of claim 1 wherein the tubular members are filled with standard concrete, polymer concrete or a filled resin system.
- 25 8. The structural element of claim 1 wherein the tubular members are filled with standard concrete, polymer concrete or a filled resin system and a metal or fibre composite reinforcing bar.
9. The structural element of claim 1 wherein the spacer members and interconnecting members are constructed from the same fibre reinforced
30 plastic.
10. The structural element of claim 1 wherein the spacer members and interconnecting members have greater strength than transverse strength of

the tubular members.

11. The structural element of claim 1 wherein the interconnecting members pass through the spacer members.

12. The structural element of claim 1 wherein the spacer members pass
5 through the interconnecting members.

13. The structural element of claim 1 wherein slots are located one or both of the interconnecting members and/or spacer members.

14. The structural element of claim 13 wherein the interconnecting members and spacer members are locked to each other.

10 15. The structural element of claim 13 wherein notches are provided in the interconnecting members and/or spacer members to engage with the slot on the other of the interconnecting member or spacer member to lock the interconnecting members and spacer members together.

16. The structural element of claim 1 wherein the interconnecting
15 members are oriented so that they are substantially perpendicular to the spacer members.

17. The structural element of claim 1 wherein the castable material is usually concrete.

18. The structural element of claim 17 wherein the concrete is polymer
20 concrete or a filled resin system.

19. A method of producing a structural element formed from castable material, said method including the steps of:

producing a mould that has a portion of an outer shape of the structural element to be produced;

25 placing fibre reinforced plastic, tubular members; fibre reinforced plastic, spacer members; and fibre reinforced plastic, interconnecting members; within the mould such that said spacer members extending between said plurality of tubular members and said interconnecting members are positioned in a different orientation to said
30 spacing members; so the spacing members and interconnecting members intersect;

locating castable material between and over said members;

allowing said castable material to set to form said structural element.

20. The method of claim 19 including the additional step of abrading the members prior to the members being introduced into the mould.

5 21. The method of claim 19 including the additional step of coating the members with sand and/or gravel prior to the members being introduced into the mould.

22. The method of claim 19 wherein the members are located within the mould and castable material poured over the members.

10 23. The method of claim 19 wherein the members are located within the mould after sufficient castable material to complete the structural element has been delivered into the mould.

24. The method of claim 19 wherein a portion of castable material is introduced into the mould and some of the members introduced into the
15 mould and then more castable material is introduced into the mould and more members are introduced into the mould.